UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/821,104	03/29/2001	Richard A. Keeney	MGI-171	3257

20028 7590 06/14/2005

Lipsitz & McAllister, LLC
755 MAIN STREET
MONROE, CT 06468

EXAMINER	
LAROSE, COLIN M	
ART UNIT	**PAPER NUMBER**
2623	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/821,104	KEENEY ET AL.	
	Examiner	Art Unit	
	Colin M. LaRose	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 February 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,6-20,22-28,30-33,37-51,53-59 and 61-64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *63 and 64* is/are allowed.

6)☒ Claim(s) *1,2,6-9,11-20,22-28,30-33,37-40,42-51,53-59,61 and 62* is/are rejected.

7)☒ Claim(s) *10 and 41* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Arguments and Amendments

1. Applicant's amendments and arguments filed 7 February 2005, have been entered and made of record.

Response to Amendments and Arguments

2. Claims 1 and 32 have been amended to denote that the size of the identified areas corresponds to an angular coverage of an average human fovea at a predetermined viewing distance. The previous combination of Jacquin and Borah does not teach such a feature, however, such a feature would have been obvious in view of U.S. Patent 6,252,989 by Geisler et al. for the reasons cited below.

3. For claims 20 and 51, Applicant argues that Jacquin does not disclose or suggest the claimed "separate data stream" and asserts that Jacquin utilizes only one data stream. Examiner maintains that a reasonable interpretation of Jacquin includes encoding the identified and unidentified areas in separate data streams, where the data stream containing the unidentified areas does not contain any information needed to recreate the identified areas.

As shown in figure 1 of Jacquin, the identified and unidentified areas are separately coded by first and second coders, 32 and 34. The outputs of the coders may be combined to form a coded video signal, but this does not preclude the interpretation that the identified and unidentified areas are in separate data streams. Separate coders create separate data streams for the different areas, and those data streams are to be decoded by separate decoders. Whether those

separately coded data streams are transmitted in tandem as a single signal or in multiple separate transmissions is immaterial and does not negative the fact that the different types of areas are coded into separate data streams for transmission as required.

For these reasons, the previous rejection of claims 20 and 51 is maintained.

4. Applicant's arguments with respect to claims 10, 41, 63, and 64 are persuasive. See paragraph 16 below.

5. Regarding Applicant's contention (see Remarks, pp. 23-24) that the combination of Jacquin and Borah is generally invalid, Examiner maintains that the combination is valid. Jacquin's system involves identifying regions of interest in a series of images. Those regions are coded at high quality levels (i.e. by coder 32, figure 1), and the areas outside those regions are coded at lower quality levels (i.e. by coder 34, figure 1).

Borah, on the other hand, is directed to a system for identifying regions within a video sequence that are of interest to human viewers. Whereas Jacquin relies on artificially generating the regions of interest in an image, Borah tracks the eye gaze points of human viewers to "identify objects on the stimulus video which generate high interest (i.e. those upon which the majority of fixation points are concentrated)" (column 5, lines 63-67). Thus, Borah discloses an advantageous method for identifying the regions of interest in an image that relies on human perceptual qualities, and it not hindsight to suggest that Jacquin's artificial means for generating regions of interest may be supplanted or complimented by Borah's perceptual approach.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1,2,6,8,9,11,12,15-17,19,20,22-24,26,28,32,33,37,39,40,42,43,46-48,50,51,53-55,57,59,63, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,764,803 by Jacquin et al. ("Jacquin") in view of U.S. Patent 4,755,045 by Borah et al. ("Borah") and U.S. Patent 6,252,989 by Geisler et al. ("Geisler").

Regarding claim 1, Jacquin discloses a method of digital image compression (figure 1), comprising:

identifying a plurality of areas of interest in at least a subset of digital images in a sequence of related images (column 3, lines 2-25: areas of interest in a current video frame are identified by the assignation of ellipses via the ellipse identifier 30);

encoding the identified areas of interest at a first quality level and unidentified ares of the image at a second and lower quality level than the identified areas in order to produce a single compressed copy of each image which can be decoded at a decoder (column 3, lines 12-25 and first and second coders 32 and 34: areas of interest are coded with high quality; all other areas are coded with low quality; each image is then concatenated into a coded video signal which can be decoded).

Jacquin does not disclose that the areas of interest are identified by a group of viewers, and that the group of viewers comprises a statistically representative subset of an intended audience in order to predict areas of interest of the intended audience.

Rather, as shown in figure 1, Jacquin's system automatically extracts objects of interest through the use of motion estimation, edge extraction, and frame differencing. Once the objects of interest are so extracted, the ellipse identifier 30 assigns ellipses of varying sizes to objects that are to be tracked. Essentially, Jacquin's method automatically extracts areas of interest in a sequence of images rather than allowing a group of viewers to identify the areas of interest.

Borah discloses a method for extracting and displaying the visual response of a group of viewers when presented a video. The concept advanced in Borah is that, when a group of viewers is shown a video sequence, their eye gazes are monitored and recorded, thereby identifying areas of interest that represents the "looking behavior" of the viewers (see column 2, line 63 though column 3, line 56, and column 4, lines 9-21). The purpose is to identify areas and objects of the video that generate high interest to the group of viewers (column 5, lines 57-68), in contrast to Jacquin's system, which relies on computer vision techniques to determine the areas of highest interest according to parameters such as the motion, shape, and cohesiveness of objects.

Also, Borah's method contemplates monitoring the gaze points of a subset of an intended audience in order to predict areas of interest from the intended audience (column 7, lines 7-19). For example, the gaze points of a group of males are generated such as shown in figure 6. The response of the small group of males provides a prediction of how a different or larger group of males would respond to the same stimuli. The goal of this type of analysis is to determine the "commercial feasibility" of visual or audiovisual presentations for effectiveness in communicating information to a given group of viewers (column 6, lines 25-35). The analysis

serves as a sort of pre-screening process by which advertisers and the like may determine the effectiveness of generating physiological interest of particular objects in a video.

Borah's system of monitoring the gaze point of a group of viewers essentially provides a method by which objects of interest in a video sequence are identified. It would have been obvious at the time of the invention to modify Jacquin by Borah to identify the areas of interest by a group of viewers that comprise a statistically representative subset of an intended audience to predict areas of interest for that audience, rather then automatic methods disclosed by Jacquin, since Borah teaches that extracting areas of interest according to a group of viewers provides areas of interest that are physiologically important to the viewers and that mimic the looking behavior of the viewers.

However, neither Jacquin nor Borah expressly discloses that the size of identified areas of interest corresponds to an angular coverage of an average human fovea at a predetermined viewing distance, as claimed.

Geisler discloses a foveated image coding system, wherein an image is coded in accordance with human perceptual properties. In particular, objects upon which the human fovea focuses are coded at higher quality, and areas far from the foveal point of focus are coded at increasingly lower qualities, such as illustrated in figure 4. The coding method involves locating a focus point and coding the area surrounding that point at a high quality. Then, concentric rings around the focus area are coded at decreasing quality. This arrangement is shown in figure 3.

The size W_0 of the central focal region, i.e. the inner square in figure 3, is based on the average human perceptual resolution at a given eccentricity, which is indicative of the viewing

distance. The size W_0 of the central focal region thus corresponds to the angular coverage of the human fovea at a given viewing distance, and the contrast thereof is set to at least greater than the foveal resolution limit. See column 3, lines 33-64.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jacquin and Borah by Geisler so that the size of the identified areas corresponds to an angular coverage of the human fovea, as claimed, since Geisler discloses that, in a foveated imaging system where variable quality images based on a point of gaze areas are constructed, it is both advantageous and conventional for the size of the area of interest having the highest quality to correspond to the angular coverage of the human fovea. This ensures that with proper fixation, the foveated image is indistinguishable from the original image. See e.g. column 3, lines 52-64 and column 8, lines 12-38.

Regarding claim 2, Jacquin discloses creating a quantization map based on the identified areas of interest (figure 1: first coder 32 creates a quantization mapping for the areas of interest), wherein:

the encoding is performed based on the quantization map (figure 1: the "coded video signal" is based on the quantization map created by the first coder 32).

Regarding claim 6, Borah discloses tracking the gaze points as claimed (column 8, lines 30-37).

Regarding claim 8, Jaquin discloses extrapolating areas of interest for a remainder of images in the sequence from the identified areas of interest in said subset (Borah, column 4, lines 61-65: areas of interest are calculated for predetermined intervals of frames, and Jacquin, column

7, lines 51-61: the areas of interest (ellipses) of the current frame are used to predict, or create extrapolated versions of, areas of interest in a successive frame; the predicted (extrapolated) areas of interest are then used to positively locate the actual areas of interest).

Regarding claim 9, Jacquin's sequence of related images is a digital motion picture.

Regarding claim 11, Borah's areas of interest are identified in real time during a live transmission of the image to a group of viewers.

Regarding claim 12, Jacquin's digital image spatially represents the image to be encoded.

Regarding claim 15, Jacquin incorporates the use of DCTs (column 10, lines 9-13).

Regarding claim 16, Jacquin discloses the quality level for blocks of pixels is adjusted for the areas of interest through the use of a quantization scale factor encoded for each block of pixels (figure 1: first coder 32 utilizes an adjusted "fine" quantization scale factor).

Regarding claims 17 and 19, Jacquin discloses adjusting the quality level of the unidentified areas downward using one of the claimed methods (figure 1: second coder 34 adjusts the quality level downward by quantizing the coefficients, thereby frequency-filtering the image).

Regarding claim 20, Jacquin discloses a method (figure 1) of digital image compression comprising:

identifying a plurality of areas of interest in the digital image (30);

sampling the identified areas of interest at a higher spatial resolution than unidentified areas of the image (32: areas identified by ellipses are quantized with a higher spatial resolution);

encoding the identified areas of interest at a first quality level for transmission to a decoder in one ore more additional data streams (first coder 32 produces a first data stream of finely quantized image data for the identified areas); and

encoding the unidentified areas of the image at a second and lower quality level than the identified areas for transmission to the decoder in a separate data stream from that containing the identified areas (second coder 34 produces a second data stream (separate from the first data stream) of coarsely quantized image data for the unidentified areas;

wherein said data stream containing said unidentified areas does not contain any information needed to recreate said identified areas of interest (as can be seen in figure 1, coding of the unidentified areas is exclusive of the coding of the identified areas and does not contain information pertaining to the identified areas).

Jacquin does not disclose that the areas of interest are identified by a group of viewers, and that the group of viewers comprises a statistically representative subset of an intended audience in order to predict areas of interest of the intended audience, however, the inclusion of these limitations would have been an obvious modification in view of Borah. See the explanation for claim 1.

Regarding claim 22, Jacquin discloses first and second coding methods, as claimed (32 and 34, figure 1).

Regarding claims 23 and 24, Borah's areas of interest are identified in real time during a live transmission and display of the image to a group of viewers.

Regarding claim 26, Jacquin maintains a constant bit rate (column 10, lines 45-47: constant frame rate).

Regarding claim 28, the areas of interest in both Jacquin and Borah are statistically recorded (e.g. their coordinates/dimensions are recorded).

Regarding claim 32, Jacquin discloses a system for digital image compression (figure 1), comprising:

means for identifying a plurality of areas of interest in at least a subset of digital images in a sequence of related images (column 3, lines 2-25: areas of interest in a current video frame are identified by the assignation of ellipses via the ellipse identifier 30);

an encoder for encoding the identified areas of interest at a first quality level and unidentified ares of the image at a second and lower quality level than the identified areas in order to produce a single compressed copy of each image which can be decoded at a decoder (column 3, lines 12-25 and first and second coders 32 and 34: areas of interest are coded with high quality; all other areas are coded with low quality; each image is then concatenated into a coded video signal which can be decoded).

Jacquin does not expressly disclose a digital image display.

Jacquin does not disclose that the areas of interest are identified by a group of viewers, and that the group of viewers comprises a statistically representative subset of an intended audience in order to predict areas of interest of the intended audience, however, the inclusion of these limitations would have been an obvious modification in view of Borah. See the explanation for claim 1.

Regarding claim 33, Jacquin discloses creating a quantization map based on the identified areas of interest (figure 1: first coder 32 creates a quantization mapping for the areas of interest), wherein:

the encoding is performed based on the quantization map (figure 1: the "coded video signal" is based on the quantization map created by the first coder 32).

Regarding claim 37, Borah discloses the claimed eye tracking mechanisms.

Regarding claim 39, Jaquin discloses extrapolating areas of interest for a remainder of images in the sequence from the identified areas of interest in said subset (Borah, column 4, lines 61-65: areas of interest are calculated for predetermined intervals of frames, and Jacquin, column 7, lines 51-61: the areas of interest (ellipses) of the current frame are used to predict, or create extrapolated versions of, areas of interest in a successive frame; the predicted (extrapolated) areas of interest are then used to positively locate the actual areas of interest).

Regarding claim 40, Jacquin's sequence of related images is a digital motion picture.

Regarding claim 42, Borah's areas of interest are identified in real time during a live transmission of the image to a group of viewers.

Regarding claim 43, Jacquin's digital image spatially represents the image to be encoded.

Regarding claim 46, Jacquin incorporates the use of DCTs (column 10, lines 9-13).

Regarding claim 47, Jacquin discloses the quality level for blocks of pixels is adjusted for the areas of interest through the use of a quantization scale factor encoded for each block of pixels (figure 1: first coder 32 utilizes an adjusted "fine" quantization scale factor).

Regarding claims 48 and 50, Jacquin discloses adjusting the quality level of the unidentified areas downward using one of the claimed methods (figure 1: second coder 34

adjusts the quality level downward by quantizing the coefficients, thereby frequency-filtering the image).

Regarding claim 51, Jacquin discloses a system (figure 1) of digital image compression comprising means for:

identifying a plurality of areas of interest in the digital image (30);

sampling the identified areas of interest at a higher spatial resolution than unidentified areas of the image (32: areas identified by ellipses are quantized with a higher spatial resolution);

encoding the identified areas of interest at a first quality level for transmission to a decoder in one ore more additional data streams (first coder 32 produces a first data stream of finely quantized image data for the identified areas); and

encoding the unidentified areas of the image at a second and lower quality level than the identified areas for transmission to the decoder in a separate data stream from that containing the identified areas (second coder 34 produces a second data stream (separate from the first data stream) of coarsely quantized image data for the unidentified areas;

wherein said data stream containing said unidentified areas does not contain any information needed to recreate said identified areas of interest (as can be seen in figure 1, coding of the unidentified areas is exclusive of the coding of the identified areas and does not contain information pertaining to the identified areas).

Jacquin does not expressly disclose a digital image display.

Jacquin does not disclose that the areas of interest are identified by a group of viewers, and that the group of viewers comprises a statistically representative subset of an intended

audience in order to predict areas of interest of the intended audience, however, the inclusion of these limitations would have been an obvious modification in view of Borah. See the explanation for claim 1.

Regarding claim 53, Jacquin discloses first and second coding methods, as claimed (32 and 34, figure 1).

Regarding claims 54 and 55, Borah's areas of interest are identified in real time during a live transmission and display of the image to a group of viewers.

Regarding claim 57, Jacquin maintains a constant bit rate (column 10, lines 45-47: constant frame rate).

Regarding claim 59, the areas of interest in both Jacquin and Borah are statistically recorded (e.g. their coordinates/dimensions are recorded).

8. Claims 25 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacquin in view of Borah and Geisler, and further in view of U.S. Patent 6,476,873 by Maeng.

Regarding claims 25 and 56, Jacquin is silent to reducing the quality of the unidentified areas for security purposes.

Maeng discloses a similar encoding system, wherein regions of interest within an image are encoded at higher quality levels than the unidentified areas. In, particular, Maeng teaches that, inter alia, reducing the quality of the unidentified areas is useful for remote security systems (column 2, lines 44-52).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jacquin by Maeng to achieve the claimed invention since Maeng teaches that, inter alia, reducing the quality of unidentified areas is useful for security purposes.

9. Claims 27 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacquin in view of Borah and Geisler, and further in view of "Lossy/Lossless Region-of-Interest Coding Based on Set Partitioning in Hierarchical Trees" by Atsumi et al. ("Atsumi").

Regarding claims 27 and 58, Jacquin is silent to transmitting the higher quality areas first, followed by the lower quality areas.

Atsumi teaches shifting the highest priority areas of interest (ROIs) to the beginning of the bitstream so that so that the areas of higher interest are transmitted before the areas of lower interest (see section 2.1). As a result, the image is built up starting with the areas of high interest.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jacquin by Atsumi to achieve the claimed invention since Atsumi teaches that transmitting and building up the highest priority areas first "enables the user to terminate transmission as soon as the ROI is reconstructed with a quality acceptable to the user, thus saving bandwidth (or time) and computational cost" (section 1, 1st paragraph).

10. Claims 14 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacquin in view Borah and Geisler, and further in view of U.S. Patent 6,256,423 by Krishnamurthy et al. ("Krishnamurthy").

Regarding claims 14 and 45, Jacquin is silent to providing a gradual transition as claimed.

Krishnamurthy discloses a similar system for coding ROIs, wherein a transition region is provided to create a gradual transition between differently coded areas (see figure 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jacquin and Borah by Krishnamurthy to achieve the claimed invention since Krishnamurthy teaches that a transition region should be included to avoid abrupt variations in quality (column 4, lines 60-64).

11. Claims 7, 13, 38, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacquin in view of Borah and Geisler, and further in view of U.S. Patent 6,144,772 by Garland et al. ("Garland").

Regarding claims 7 and 38, Jacquin does not disclose the areas of interest are designated by a pointing device as claimed.

Garland discloses an image compression system similar to that of Jacquin wherein areas of interest are designated and encoded at different levels of quality. Whereas Jacquin teaches the automatic selection of areas of interest in a video frame, Borah and Garland teach that viewers may designate the areas of interest. Garland further teaches that areas of interest can be designated by users' manipulation of a pointing device (column 2, lines 11-15).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jacquin and Borah by Garland to achieve the claimed invention since Garland discloses that areas of interest can be designated based on user preference rather than automatic selection in accordance with Borah, and Garland shows that using a pointing device to allow users to select areas of interest is a conventional technique.

Regarding claims 13 and 44, Jacquin does not disclose assigning, to areas of interest, first values to areas of higher interest and second values to areas of lower interest; and

encoding each area of interest at a quality level corresponding to the assigned value, as claimed.

Garland discloses an image compression system similar to that of Jacquin wherein areas of interest are designated and encoded at different levels of quality. Whereas Jacquin designates that all areas of interest are to be encoded with "fine quantization" (figure 1, first coder 32), Garland discloses that the areas of interest within an image may have varying levels of importance, and therefore, the areas of interest are assigned different values based on the amount of interest in each area (column 6, line 6 through column 7, line 8).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jacquin by Garland to assign different values to the areas of interest, based on relative importance, and encode those values, since Garland shows that this feature provides more flexibility in that each of the areas of interest may be encoded according to different quality levels.

12. Claims 18 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacquin in view Borah and Geisler, and further in view of U.S. Patent 5,896,176 by Das et al. ("Das").

Regarding claims 18 and 49, Jacquin utilizes the DCT transform but does not expressly disclose using a wavelet transform to encode the image.

Das discloses an MPEG coding system, similar to that of Jacquin, wherein wavelet encoding is utilized in lieu of DCT coding (column 10, lines 40+).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jacquin and Borah by Das to utilize wavelets for encoding, since Das teaches that, in the MPEG environment, wavelet transforms may advantageously replace the DCT transform for the purposes of image encoding.

13. Claims 30, 31, 61, and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacquin, in view of Borah and Geisler, and further in view of U.S. Patent 6,356,664 by Dunn et al. ("Dunn").

Regarding claims 30 and 61, Jacquin is silent to enhancing the quality levels of unidentified areas to artificially create additional areas of interest to draw a viewer's attention, as claimed.

Dunn discloses a system for priority-encoding regions of interest in video data, similar to that of Jacquin. In particular, Dunn discloses enhancing the quality levels of certain objects in an image in order to draw a viewer's attention to the objects (figure 9 and column 8, line 61 through column 9, line 10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jacquin and Borah by Dunn to enhance certain areas of the image to draw attention to those areas, as claimed, since Dunn teaches that this feature is useful for advertising purposes.

Regarding claims 31 and 62, Dunn discloses the areas of interest are products (column 8, lines 61-67).

Allowable Subject Matter

14. Claims 10 and 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. Claims 63 and 64 are allowed.

16. Regarding claims 10, 41, 63, and 64, Applicant's argument that Borah's graphical representation of fixation points does not correspond to the claimed utilization of an histogram to determine the most popular points is persuasive. See Remarks, pp. 21-23. In addition, Geisler suggests utilizing a group of viewers on a test video to determine the popular gaze points. The fixation "patterns" would then be used to create a foveated version of the image. Column 8, lines 22-35. However, Geisler does not disclose or suggest using an histogram for determining the most popular patterns, as claimed.

For these reasons, claims 63 and 64 are allowed, and claims 10 and 41 are objected to.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colin M. LaRose whose telephone number is (571) 272-7423. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au, can be reached on (571) 272-7414. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600 Customer Service Office whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VIKRAM BALI
PRIMARY EXAMINER

CML
Group Art Unit 2623
7 June 2005